DOCUMENT RESUME

HE 000 164

ED 024 348

By- Lunneborg, Patricia W.

Biographic Survey Responses of Graduating College Seniors.

Washington Univ., Seattle. Bureau of Testing.
Spons Agency- Washington Univ., Seattle. Graduate School.
Report No- BTP-0666-165
Pub Date Nov 68
Note- 11p.
EDRS Price MF-$0.25 HC-$0.65
Descriptors- *Academic Achievement, *Achievement Rating, *College Entrance Examinations, College Students, Group Intelligence Testing, *Higher Education, Performance Criteria, Superior Students, *Tests

A group of 126 University of Washington seniors, consisting of 59 women and 67 men, voluntarily retook their precollege aptitude test battery to complete an experimental "College Graduate Survey." The entrance test performance is assumed to be the intellectual level of university freshmen who progress at a normal rate and graduate in 4 years. In studying this group, an attempt was made to predict achievement criteria by evaluating the effectiveness of precollege variables such as educational orientation and experiences, religious background, parents' education, and views on marriage. Other variables considered were academic standing, significant relationships with other students, postgraduate career or study plans, and perception of the university. A comparison of precollege test scores and high school grades in predicting college GPAs and other educational achievement criteria taken from the "College Graduate Survey" revealed that mathematics was the best high school GPA predictor, and that quantitative test predictors had a greater utility than verbal tests. It was also found that high school grades are better predictors of college grades than other achievement criteria used in the Survey. The study concluded that nonverbal reasoning ability was the largest overall contributor to college achievement. (HM)

Bureau of Testing

University of Washington

November 1968

# Biographic Survey Responses of Graduating College Seniors[1]

Patricia W. Lunneborg

This report concerns 126 University of Washington seniors who completed an experimental "College Graduate Survey" when they voluntarily retook their precollege test battery. Their survey responses provide information regarding their family background, perceptions of the university, their educational orientation and experiences at UW, their plans for future education and careers, and lastly, the efficacy of precollege tests and grades for predicting different kinds of achievement criteria.

This report summarizes the background, career goals, and educational experiences of 126 University of Washington (UW) seniors who completed an experimental "College Graduate Survey" when they voluntarily retook their precollege aptitude test battery. Comparisons of this sample with all University freshmen entering at the same time (autumn 1963) revealed a group superior in all respects intellectually (Lunneborg & Lunneborg, 1968b). The entrance test performance of this select sample thus constitutes a description of the level of intellect of University freshmen likely to be successful, i.e., progress at the normal rate and graduate in four years. The present report provides a nonintellectual description of such successful students and a comparison of the efficacy of precollege variables for predicting different kinds of achievement criteria. The sample consisted of 59 women

[1]Acknowledgement is made of support in part by the University of Washington Graduate School Research Fund Grant No. 11-4791.

Bureau of Testing Project: 0666-165

and 67 men with a mean age of 21.28. All were citizens of the U. S. and only 16 had not graduated from Washington state high schools.

Background of sample. In support of greater female viability all of the mothers of these seniors except one were living but 14% of their fathers were deceased. Over half of these mothers had a job outside the home. The correspondence of mother's education, particularly, with getting a college degree is illustrated in Table 1. Eighty-one percent of both fathers and mothers of the senior women had education beyond high school, and in fact, 36% of their fathers and 17% of their mothers had gone to graduate school.

Table 1

Father's and Mother's Education

| | % less than HS diploma | % HS diploma | % more than HS diploma | |
|---|---|---|---|---|
| 1967 entering freshmen | 12 | 26 | 62 | Father's education |
| Males (N = 2073) | 13 | 26 | 61 | |
| Females (N = 1906) | 12 | 25 | 63 | |
| 1967 graduating seniors | 13 | 21 | 66 | |
| Males (N = 67) | 18 | 28 | 54 | |
| Females (N = 59) | 7 | 12 | 81 | |
| 1967 entering freshmen | 9 | 38 | 53 | Mother's education |
| Males | 9 | 39 | 52 | |
| Females | 8 | 37 | 55 | |
| 1967 graduating seniors | 5 | 25 | 70 | |
| Males | 6 | 33 | 61 | |
| Females | 3 | 16 | 81 | |

The data for the fall 1967 entering UW freshman class were taken from Morishima's (1968) report of national and local norms for the American Council on Education Questionnaire.

Nine percent of the sample were married and rather surprisingly 82%, with no difference between the sexes, said they were single and didn't expect

to marry in the next year. Whereas 78% had a Protestant religious background, 54% indicated Protestant as their present religious preference. Only 4% had a nonreligious upbringing, but 29% had no current religious preference. Interestingly, 9% of entering freshmen in 1967 said they were likely to get married while in college (Morishima, 1968).

The distributions of undergraduate majors of the sample were:

| | % Males | % Females |
|---|---|---|
| Business and administration | 10 | 3 |
| Education (all teaching except college) | 1 | 10 |
| Engineering | 29 | 0 |
| Humanities | 6 | 31 |
| Biological sciences | 3 | 5 |
| Social sciences | 29 | 29 |
| Physical sciences and mathematics | 15 | 5 |
| Health professions (dentistry, medicine, etc.) | 3 | 12 |
| Agriculture, forestry, veterinary medicine | 3 | 0 |
| Other fields (architecture, communications, etc.) | 1 | 5 |

Although caution is the rule with a sample this small, there are interesting differences in the distribution of father's occupations for males and females in Table 2 which do not exist in high school seniors (Lunneborg & Lunneborg, 1968a, p. 13) where the proportions for the sexes do not differ. Females who graduate from college have fathers in service and sales occupations more than graduating males who, on the other hand, have fathers in technological occupations to a far greater extent. There is no ready explanation for this in terms of socioeconomic status which correlates negatively with the service and technology groups and positively with sales and organization. The large proportion of students intending scientific and general cultural occupations is quite consistent with previous findings.

Table 2

Father's and Own Intended Occupation of College Seniors

Using Roe's Classification

| | Father's | | Own intended | |
|---|---|---|---|---|
| | % Males | % Females | % Males | % Females |
| Service | 13 | 36 | 9 | 20 |
| Business contact | 6 | 31 | 0 | 3.5 |
| Organization | 24 | 26 | 17 | 7 |
| Technology | 37 | 3 | 24 | 0 |
| Outdoor | 8 | 2 | 4 | 0 |
| Science | 9 | 0 | 23 | 27 |
| General cultural | 3 | 0 | 23 | 39 |
| Arts and entertainment | 0 | 2 | 0 | 3.5 |

Perception of the university. The modal emotional feeling towards UW was "I like it but my feelings are not strong" (57%). Very strong attachment was acknowledged by 21%, mixed feelings by 17%, and only 5% did not like the university. Following are rank orders of college atmosphere and negative characteristics.

| Atmosphere | Most characteristic |
|---|---|
| Competitive 31% | Great pressure for high grades 34% |
| Apathetic 18% | There is little school spirit 22% |
| Realistic 13% | Faculty not concerned enough with teaching 13% |
| Practical-minded 11% | Students are like numbers in a book 12% |
| Warm 10% | You feel lost very easily 6% |
| Liberal 8% | Student academic calibre is low 5% |
| Intellectual 7% | Not much to do except study 2% |
| Social 2% | Expressing ideals in action is discouraged 2% |
| Victorian 0% | Athletics are overemphasized 1% |

It would seem that despite the university's large enrollment anonymity is not students' greatest problem. Instead, they are more impressed by the competitiveness and low morale or school spirit so typical of large universities (Astin, 1968). Contributing to this latter condition is a large commuter

population, and indeed 61% of this senior sample were either living with their parents or in some type of off-campus dwelling. This preoccupation with academic standing is typical of students who select UW (Morishima, 1968).

Educational orientation and experiences. Rather surprising is the distribution of responses to four philosophies of higher education: vocational 16%, intellectual 19%, collegiate 29%, and nonconformist 36%. The latter is perhaps mislabeled. It read: "Education should be a search for basic values and meaning in life. One should be involved with ideas and art forms both in school and out and be concerned with one's personal identity." In a sample of UW freshmen entering in 1965 only 10% endorsed this particular philosophy which at that point in time was a good predictor of both withdrawal from school and changing major in the first quarter of university study (Lunneborg & Lunneborg, 1966). Obviously, these philosophies have different meanings in different student groups, and retrospectively as opposed to prospectively.

Students judged their courses of greatest effect in career planning and of least effect their contacts with professionals employed to assist students in this type of planning. One-quarter of them claimed never to have had discussions either with faculty or advisors, paralleling the lack of concern for the individual apparent in the ranking of negative characteristics. "Significant relationships" with other students were important to 64%. Given this influence of friends it is noteworthy that one-third of the sample said most of their close friends were going to graduate school.

Fifty-seven percent of this sample were employed during the academic year; 23% had jobs relevant to their anticipated careers, 34% jobs having nothing to do with ultimate career choice. Only three percent worked full-time. Forty percent had no "important activity" in college, while the most nominated

Table 3

Effects of College Experiences on Career Plans

| | % Very important | % Fairly important | % Unimportant | % Not applicable |
|---|---|---|---|---|
| Academic advisor | 4 | 18 | 52 | 26 |
| Faculty members | 17 | 32 | 29 | 22 |
| Parents | 13 | 38 | 36 | 13 |
| Courses which helped decide what to do | 36 | 34 | 30 | |
| Courses which helped decide what not to do | 33 | 26 | 41 | |
| Professional psychological or vocational counselor | 4 | 8 | 16 | 72 |
| Pre-college aptitude or vocational tests | 2 | 13 | 79 | 6 |
| Other students | 21 | 43 | 35 | 1 |
| Work during college | 23 | 30 | 41 | 6 |
| Critical life experiences | 14 | 14 | 33 | 39 |

activities were fraternities (23%) and special interest groups (17%). These students were as little involved in their university as they perceived it was concerned about them.

Only 13% of these students judged their academic standing in relation to others in the same major as below the 50th percentile. Fifty-seven percent placed themselves in either the top 10 or 25 percent which perception is probably realistic considering their cumulative GPA at graduation of 2.90 compared with 2.69 for all UW seniors spring quarter 1967 (N = 4,611). This GPA may also be compared with those for 1966 Arts and Sciences seniors

graduating in 4 years: major GPA of 3.09, non-major GPA of 2.92 (Morishima, 1967).

Educational and career plans. Forty-two percent of this group planned graduate study for the year after receiving their bachelor's. One-third, with more women than men, said instead they would be commencing their chosen career after graduation. No one was going to be a housewife, at least immediately. One-third also indicated they had a definite job lined up and were no longer looking. Actually 80% planned graduate or professional school sometime in the future, and 44% said they expected to receive support such as a fellowship, assistantship, etc. With over half applying for financial aid for post-baccalaureate study and 20% not ever going on, there were not many left to offer reasons as to why they did not apply for financial aid. However, the most frequently given reason for reluctance was "I will not need any support of this type" (13%). Very few explained not going to graduate school immediately in terms of lack of ability. They wanted practical experience first or could get desirable jobs without further schooling or had military service to complete. There was dissatisfaction expressed with graduate school prospects. Almost half of those planning graduate studies said that if absolutely free to choose one's school they would be going elsewhere. This compares with only 19% who if absolutely free to choose would study something else.

In response to naming the graduate school they would most probably attend 50 of the 78 students who gave a school named their alma mater. Schools with two or three nominations were University of California, University of Oregon, Columbia, Stanford, University of Minnesota, University of Chicago, Purdue, and University of Wisconsin.

The most popular employers in anticipated career field were: private companies with 100 or more employees (26%), school systems (21%), and colleges (17%). The most important activities in anticipated careers were: teaching (31%), research (23%), and service to patients or clients (21%). Less desirable were administration, consultation, and salesmanship. Job characteristics which mattered most were humanistic and intellectual:

| | % Males | % Females |
|---|---|---|
| Making a lot of money | 12 | 3 |
| Opportunity to be original | 26 | 15 |
| Opportunity to be helpful to others | 15 | 19 |
| Avoiding a high pressure job which takes too much out of you | 4 | 0 |
| Living in the world of ideas | 20 | 19 |
| Freedom from supervision in my work | 4 | 3 |
| Opportunity for moderate but steady progress rather than the chance of extreme success or failure | 2 | 3 |
| Chance to exercise leadership | 8 | 5 |
| Remaining in the city or area in which I grew up | 0 | 0 |
| Opportunity to work with people rather than things | 9 | 33 |

The sexes differed in the importance attached to a career in the future but, amazingly, family was the most preferred focus for both. "Ten years from now I hope to have a life centering around

| | % Males | % Females |
|---|---|---|
| My home and family | 28 | 64 |
| The creative arts | 3 | 7 |
| My work as a trained technician or craftsman | 2 | 0 |
| Research or other scholarly work | 12 | 5 |
| Business or commerce | 4 | 0 |
| My profession (law, medicine, engineering, etc.) | 21 | 7 |
| Service to others (teaching, guidance, protection, etc.) | 21 | 15 |
| Administration, management, decision-making | 9 | 2 |

Precollege variables and different achievement criteria. Table 4 provides a comparison of the efficacy of precollege tests and high school grades in predicting both college GPA's and other types of educational

achievement criteria. The latter were taken from the "College Graduate Survey" and help fill the need for both criteria independent of grades and criteria beyond the undergraduate years. The most striking feature to Table 4 is the greater utility of quantitative test predictors over verbal tests. The predictability of college grades is somewhat greater than predictability of the Survey-based criteria and in particular when the predictors are high school grades. The best high school GPA predictor was mathematics (e.g., r with all-university GPA = .54) paralleling the best test predictors which were quantitative. Note that the best test predictor for 14 of 16 criteria was either data sufficiency or quantitative judgment both aptitude measures as opposed to mathematics achievement which is largely influenced by amount of mathematics studied. It must be concluded that the greatest contributer to all kinds of college educational criteria is nonverbal reasoning ability.

Table 4

Prediction of Different Criteria of Academic Achievement from the Washington Pre-College Test Battery

(Decimal points omitted)

| Criteria | Predictors | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Vocab | Engl Usage | Spell | Read Speed | Read Comp | Data Suff | Quant Judg | Func Rela | Appl Math | Math Ach | Space Abil | Mech Reas | HS Engl | HS For Lang | HS Math | HS Nat Sci | HS Soc Stu | HS Elect |
| Grad school foll | 18 | 05 | 19 | 17 | 17 | 33 | 35 | 32 | 30 | 34 | 13 | 28 | 01 | 04 | 10 | 05 | 05 | 00 |
| Expect grad school | 22 | 14 | 19 | 14 | 22 | 28 | 26 | 24 | 22 | 25 | 19 | 17 | 05 | 18 | 24 | 25 | 14 | -01 |
| Expect financial supp | 11 | 02 | 12 | 15 | 18 | 30 | 28 | 30 | 28 | 29 | 10 | 18 | -05 | 07 | 20 | 22 | 06 | -02 |
| Have decided grad school | 12 | 06 | 10 | 13 | 18 | 30 | 32 | 29 | 32 | 30 | 15 | 26 | 03 | 08 | 19 | 14 | 10 | -19 |
| Would choose same school | 11 | 11 | 08 | -06 | 14 | 28 | 28 | 25 | 26 | 24 | 21 | 27 | -05 | 09 | 25 | 14 | -04 | -03 |
| Would choose same field | 09 | 05 | 12 | 07 | 12 | 23 | 25 | 23 | 16 | 24 | 18 | 23 | -07 | 12 | 14 | 12 | -04 | -04 |
| Grad school before 1970 | 19 | 08 | 24 | 15 | 19 | 34 | 35 | 35 | 27 | 33 | 24 | 32 | -05 | 06 | 23 | 10 | 03 | -07 |
| No obstacle to grad sch | -15 | -10 | -04 | -07 | -09 | 05 | 11 | 07 | 12 | 10 | 04 | 10 | 15 | 04 | 21 | 26 | 20 | -01 |
| Number Univ. Honors | 23 | 19 | 05 | 21 | 22 | 31 | 31 | 27 | 24 | 30 | 17 | 29 | 17 | 07 | 33 | 29 | 22 | 04 |
| Senior rank in major | 17 | 17 | 17 | 17 | 13 | 22 | 21 | 19 | 16 | 22 | 13 | 11 | 10 | 15 | 35 | 28 | 11 | 01 |
| All-University GPA | 25 | 32 | 17 | 10 | 28 | 48 | 47 | 43 | 36 | 46 | 20 | 31 | 19 | 31 | 54 | 38 | 23 | 07 |
| Mathematics GPA | 29 | 38 | 09 | 08 | 14 | 41 | 36 | 31 | 22 | 38 | 18 | 18 | 24 | 26 | 47 | 33 | 13 | 04 |
| Chem-Physics GPA | 09 | 17 | 18 | -18 | 16 | 37 | 39 | 36 | 28 | 39 | 18 | 26 | 19 | 21 | 35 | 28 | -01 | 15 |
| Adv English GPA | -05 | 06 | -15 | -06 | 15 | 28 | 28 | 24 | 22 | 27 | 03 | 29 | 03 | 05 | 29 | 13 | 03 | -06 |
| Foreign Lang GPA | 24 | 29 | 28 | -13 | 01 | 32 | 34 | 28 | 29 | 37 | 05 | 23 | 29 | 38 | 33 | 33 | 12 | 09 |
| Art-Architect GPA | 10 | 24 | 05 | -06 | 15 | 20 | 22 | 17 | 11 | 23 | 21 | 00 | 31 | 33 | 40 | 22 | 25 | 06 |

Note.--Math GPA based on 92 cases, Chem-Physics 85, Advanced English 51, Foreign Language 85, and Art-Architecture 46. All other criteria based on N = 126.

References

Astin, A. W. The college environment. Washington, D. C.: American Council on Education, 1968.

Lunneborg, P. W., and Lunneborg, C. E. The differential prediction of college grades from biographic information. Educational and Psychological Measurement, 1966, 26, 917-925.

Lunneborg, P. W., and Lunneborg, C. E. Roe's classification of occupations in predicting academic achievement. Journal of Counseling Psychology, 1968, 15, 8-16. (a)

Lunneborg, P. W., and Lunneborg, C. E. Comparisons on the Washington Pre-College test battery resulting from readministration to graduating college seniors. Seattle: Bureau of Testing, University of Washington, 1968. (b) (Duplicated report)

Morishima, J. K. Some characteristics of students entering an institution of higher learning in fall, 1962, who graduated from the College of Arts and Sciences at the University of Washington in June, 1966. Seattle: Office of Institutional Educational Research, 1967. (Duplicated report)

Morishima, J. K. Description of the fall, 1967, entering undergraduate class: a summary of a questionnaire administered for the American Council on Education. Seattle: Office of Institutional Educational Research, 1968. (Duplicated report)